National Institute of Environmental Health Sciences

Malaria in selected non-Amazonian countries of Latin America

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Abstract:

Approximately 170 million inhabitants of the American continent live at risk of malaria transmission. Although the continent's contribution to the global malaria burden is small, at least 1-1.2 million malaria cases are reported annually. Sixty percent of the malaria cases occur in Brazil and the other 40% are distributed in 20 other countries of Central and South America. Plasmodium vivax is the predominant species (74.2%) followed by P. falciparum (25.7%) and P. malariae (0.1%), and no less than 10 Anopheles species have been identified as primary or secondary malaria vectors. Rapid deforestation and agricultural practices are directly related to increases in Anopheles species diversity and abundance, as well as in the number of malaria cases. Additionally, climate changes profoundly affect malaria transmission and are responsible for malaria epidemics in some regions of South America. Parasite drug resistance is increasing, but due to bio-geographic barriers there is extraordinary genetic differentiation of parasites with limited dispersion. Although the clinical spectrum ranges from uncomplicated to severe malaria cases, due to the generally low to middle transmission intensity, features such as severe anemia, cerebral malaria and other complications appear to be less frequent than in other endemic regions and asymptomatic infections are a common feature. Although the National Malaria Control Programs (NMCP) of different countries differ in their control activities these are all directed to reduce morbidity and mortality by using strategies like health promotion, vector control and impregnate bed nets among others. Recently, international initiatives such as the Malaria Control Program in andean-country Border Regions (PAMAFRO) (implemented by the andean Organism for Health (ORAS) and sponsored by The Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM)) and The Amazon Network for the Surveillance of Antimalarial Drug Resistance (RAVREDA) (sponsored by the Pan American Health Organization/World Health Organization (PAHO/WHO) and several other partners), have made great investments for malaria control in the region. We describe here the current status of malaria in a non-Amazonian region comprising several countries of South and Central America participating in the Centro Latino Americano de Investigación en Malaria (CLAIM), an International Center of Excellence for Malaria Research (ICEMR) sponsored by the National Institutes of Health (NIH) National Institute of Allergy and Infectious Diseases (NIAID).

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Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

El Nino Southern Oscillation, Temperature

Temperature: Fluctuations

Geographic Feature: ☒

resource focuses on specific type of geography

None or Unspecified

Geographic Location: ☒

resource focuses on specific location

Non-United States

Non-United States: Central/South America, Non-U.S. North America

Health Impact: ☒

specification of health effect or disease related to climate change exposure

Infectious Disease

Infectious Disease: Vectorborne Disease

Vectorborne Disease: Mosquito-borne Disease

Mosquito-borne Disease: Malaria

Resource Type: ☒

format or standard characteristic of resource

Research Article, Review

Timescale: ☒

time period studied

Time Scale Unspecified